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## PATENT SPECIFICATION

461,221



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### COMPLETE SPECIFICATION

#### Compositions Suitable for Use in the Washing of Textile Materials or for other Washing Purposes

We, ROBERT HENRY MARRIOTT, D.Sc., F.I.C., of 31, Upland Road, Sutton, in the County of Surrey, a British Subject, BERNARD BARON DUGAN, of 28, Basing  
5 Way, Thames Ditton, in the County of Surrey, a British Subject, and F. W. BERK & COMPANY LIMITED, a company registered under British Law, whose registered offices are 52/54, Leadenhall  
10 Street, London, E.C.3, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascer-  
15 tained in and by the following state- ment:—

This invention relates to compositions which are suitable for use as a shampoo or hair wash, for washing fibrous materials or articles of clothing made of  
20 wool, silk, cotton, linen, artificial silk and the like, or for washing materials such as glass, china, metal or the like.

British Patent 401,413 describes the use of a so-called sulphonated alcohol or  
25 alkali salt thereof and a colloidal clay known as bentonite, that is a clay with a micaceous habit with facile cleavage and a felt like texture, and which gives thixotropic pastes with water. The sub-  
30 stance bentonite is deemed for the purpose of this invention to include the synthetic material.

In place of or in addition to sul-  
35 phonated fatty alcohols described in Patent 401,413, we have found that any of the following sulphonated products can be successfully used. It is to be understood that we specifically disclaim  
40 Turkey Red Oils or any other compounds coming within the following general descriptions which are not generally con- sidered to possess detergent properties. Suitable proportions for the composi-  
45 tions of this invention are 1 part of the sulphonated product to 1—5 parts of Bentonite, but the invention is not limited to these proportions.

1. Sulphonated amino compounds of the type  $R_1-CO-NH-R_2SO_3H$ , or  
50 the alkali salts thereof, where  $R_1$  is an aliphatic hydrocarbon residue contain- ing 10 to 20 carbon atoms and  $R_2$  an aliphatic hydrocarbon residue

containing one to five carbon atoms.

2. Sulphonated esters of the type  $R_1-COO-R_2SO_3H$ , or the alkali salts thereof where  $R_1$  is an aliphatic hydro-  
60 carbon residue containing 10 to 20 carbon atoms and  $R_2$  an aliphatic hydrocarbon residue containing one to 10 carbon atoms.

3. Ester soaps comprising the alkali salts of sulphonic acids of the type  $R_1O-SO_3H$  where  $R_1$  is an aliphatic hydrocarbon residue containing 10 to 20  
65 carbon atoms.

It has been found that the above com- positions possess the valuable properties of the mixtures covered by British  
70 Patent 401,413, which properties are fully described in that Patent.

Compositions of this invention are suitable for the washing of all textile fibres, whether in the raw state, in the form of yarn, cloth or piece goods. They are also suitable for washing glass, china,  
75 metal and the like. Further, they are suitable for washing the skin, for use as hair shampoos and for general toilet and household purposes. They can be moulded into tablets and bars, and can then be used in a way similar to ordinary  
80 soap. They can also be made up into suitable pastes for this purpose. Colouring and scented matter can be added as desired.

There may be used in conjunction with the compositions of this invention an alkaline material such as borax, di-sodium hydrogen phosphate or other  
90 sodium phosphate, or sodium carbonate or bicarbonate or the like, or mixtures thereof.

If desired the compositions can be mixed with water and/or glycerine, and the compositions admixed with water and/or glycerine are included in this  
95 invention.

A suitable composition for washing textile materials may be made by mixing  
100 6 ozs. of bentonite and 3 ozs. of the sodium salt of a sulphonated amino compound of the formula

$C_{17}H_{35}CO.NH.C_2H_5SO_3Na$  and dissolving and/or dispersing in 8  
105 gallons of warm water.

As a further example of the compositions of this invention it has been found that a satisfactory hair wash composition may be made by mixing 3 parts of bentonite and one part of the sodium salt of a sulphonated ester of the formula  $C_{10}H_{19}OSO_3Na$  and one part of sodium bicarbonate, the parts being by weight. Half an ounce of the above composition to be dissolved and/or dispersed in 10-ounces approximately of water.

In the afore-mentioned examples it must be understood that the constituent parts of the mixture may be added to the water without previous mixing, either separately or simultaneously, and the properties of such solutions and/or suspensions are the same as in the above examples.

The mixtures of the invention possess the advantageous properties that they do not form insoluble calcium or magnesium soaps with the ordinary water used for washing purposes, and, in addition, possess, by virtue of the properties of the bentonite, marked water-softening powers.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A composition suitable for use in the washing of textile materials or for other washing purposes, composed of a detergent sulphonated product of the type  $R_1-CO-NH-R_2-SO_3H$  and/or  $R_1-COO-R_2-SO_3H$  and/or  $R_1-O-SO_3H$  where  $R_1$  is an aliphatic hydrocarbon residue containing not less than 10 and not more than 20 carbon atoms and  $R_2$  is an aliphatic hydro-

carbon residue containing 1 to 5 carbon atoms, and  $R_2$  is an aliphatic hydrocarbon residue containing 1 to 10 carbon atoms, or the alkali salts thereof, all as hereinbefore defined, and a colloidal clay known as Bentonite.

2. Compositions suitable for use in the washing of textile materials or for other washing purposes, composed of a detergent sulphonated material as described in claim 1, a colloidal clay known as Bentonite, with the addition of an alkaline material such as borax, disodium hydrogen phosphate or other sodium phosphate, or sodium carbonate or bicarbonate or the like, or mixtures thereof.

3. Compositions suitable for use in the washing of textile materials or other washing purposes as claimed in claims 1 and 2, characterized in that one part of the detergent sulphonated material, as described in claim 1, is mixed with 1 to 5 parts of Bentonite.

4. Compositions for use as shampoos or hair washes substantially as described.

5. Compositions for use in the washing of textile materials substantially as described.

6. Compositions for use in the washing of materials such as glass, china, metal or the like substantially as described.

7. Compositions as claimed in any of the preceding claims, admixed with water and/or glycerine.

Dated the 7th day of October, 1936.

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Secretary.